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EXAMINER
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WU, ALLEN S

ART UNIT	PAPER NUMBER
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2135

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/898,184

Applicant(s)

SO ET AL.

Examiner

Allen S. Wu

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 3, 5-7, 20 rejected under 35 U.S.C. 102(e) as being anticipated by Bertram, US Publication 2003/0140340.

As per claims 3 and 20, Bertram discloses a method of delivering content from one or more cable systems to subscriber terminals within the cable systems (see for example; abstract and fig 1), the cable systems being communicatively coupled to an offline encryption device (see for example; 130 fig 1), the method comprising;

receiving by a first cable system, a request for the content from a first subscriber terminal of the first cable system (see for example; 407 fig 4 and paragraphs 51-52),

pre-encrypting, by the offline encryption device, the content to form pre-encrypted content prior to the step of receiving a request (see for example; paragraph 63);

generating an encryption record containing parameters employed for encrypting the content; based on the encryption record and a first key information (see for example; encryption algorithm, paragraphs 45-46; an encryption record must be generated in order to carry out encryption and carry out synchronization with the generation of "descrambling" messages)

generating one or more control messages for permitting access to the pre-encrypted content (see for example; paragraphs 46-47);

and transmitting the pre-encrypted content associated with the one or more control messages to the first subscriber terminal for decryption of the me-encrypted content (see for example; paragraphs 31 and 47).

As per claim 5, Bertram discloses the claimed limitations as described above (see claim 3) and further discloses wherein the first key information is provided by a conditional access system (see for example; paragraph 47) that uses the key information to control the first subscriber terminal (see for example; paragraph 47; the set top terminal descrambles the content thereby prohibiting unauthorized users from viewing the encrypted content).

As per claim 6, Bertram discloses the claimed limitations as described above (see claim 3) and further discloses wherein the key information is for a key that is periodical and valid for a designated duration (see for example; paragraph 63).

As per claim 7, Bertram discloses the claimed limitations as described above (see claim 3) and further discloses wherein the designated duration is shortly before, contemporaneous with, or shortly after the first key is changed by the conditional access system (see for example; paragraph 63).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colligan et al (hereinafter Colligan), US Patent 6,415,031, in view of applicant's admitted prior art (herein after AAPA).

As per claim 1, Colligan discloses a system for delivering content to a subscriber terminal on-demand through a communication network (see for example; abstract and fig 4), the system comprising:

a content preparation module for pre-encrypting the content offline to form pre- encrypted content (see for example; col 6 ln 57-65 and col 8 ln 7-42)

an on-demand module receiving the pre-encrypted content from the content preparation module (see for example; remote server fig 4 and col 6 ln 57-65), for storing, and transmitting the pre-encrypted content to the subscriber terminal when authorized (see for example; col 7 ln 20-34);

and a conditional access system for providing a periodical key to the encryption renewal system (see for example; col 4 ln 44-59 and col 8 ln 47-58).

Colligan further discloses a renewal encryption system to generate control messages allowing the pre-encrypted content to be decryptable for a designated duration (see for example; col 8 ln 41-56 and col 9 ln 11-16). Colligan does not explicitly teach an encryption renewal system generating entitlement control messages (ECMs) allowing the pre-encrypted content to be decryptable for a designated duration and to permit generation of the entitlement control messages that convey information required to decrypt the pre-encrypted content including the periodical key to the subscriber terminal. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). Colligan discloses a means of decrypting by providing information on creating the decryption key (see for example; col 7 ln 27-34) and that there is a need to provide access restriction due to billing for premium channels (see for example; col 4 ln 44-59). However, Colligan is silent of the means of such access restriction. The use of ECMs are well known in the art to provide a means of restricting access in addition to

allowing for decryption and access to content. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the system of Colligan because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

As per claim 2, Colligan-AAPA discloses the claimed limitations as described above (see claim 1). Colligan further discloses system wherein communication network is a cable network for distributing audio/video content from a cable central office to all or a subset of subscriber terminals (see for example; fig 4 and col 3 ln 50-65).

5. Claims 4, 21, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340, in view of Dunn et al (hereinafter Dunn), US Patent 6,154,772.

As per claim 4, Bertram discloses a means of distributing content using a cable system as described above (see claim 3). Bertram is silent on the details of a second cable system. However, communication of content to multiple cable systems is well known in the art. Dunn et al discloses delivering content to multiple cable systems (see for example; fig 2 and col 2 ln 45-60) to reduce bandwidth and further gain control of distribution of cable and/or satellite content to subscribers (see for example; col 2 ln 7-31). Bertram discloses such a system communicating within a network (see for example; fig 5 and paragraphs 29-30).

Communication between multiple networks is well known in the art. One of ordinary skill in the art at the time of the applicant's invention would have been able to perform pre-encryption using the system of Bertram for a second cable system of Dunn. It would have been obvious to one of ordinary skill in the art to combine the second cable system of Dunn within the system of Bertram because it would have provided a means of freeing bandwidth when broadcasting to multiple subscribers by offsetting transmission between different cable systems.

As per claim 21, Bertram discloses the claimed limitations as described above (see claim 20). As for receiving, by the encryption renewal system, a second cryptographic information from the second communication system; receiving the encryption record containing parameters employed during encryption to form the pre-encrypted content, and generating for the second communication system, a second control message for providing access to the pre-encrypted content based on the second cryptographic information and the encryption record, Bertram discloses a means of distributing content using a cable system as described above (see claim 3). Bertram is silent on the details of a second cable system. However, communication of content to multiple cable systems is well known in the art. Dunn et al discloses delivering content to multiple cable systems (see for example; fig 2 and col 2 ln 45-60) to reduce bandwidth and further gain control of distribution of cable and/or satellite content to subscribers (see for example; col 2 ln 7-31). Bertram discloses such a system



communicating within a network (see for example; fig 5 and paragraphs 29-30). Communication between multiple networks is well known in the art. One of ordinary skill in the art at the time of the applicant's invention would have been able to perform pre-encryption by repeating the means of the system of Bertram as described above for a first cable system (see claim 20), for a second cable system of Dunn. It would have been obvious to one of ordinary skill in the art to combine the second cable system of Dunn within the system of Bertram because it would have provided a means of freeing bandwidth when broadcasting to multiple subscribers by offsetting transmission between different cable systems.

As per claim 32, Bertram discloses maintaining a list of a first communication system and their addressing information (see for example; fig 5 and paragraphs 29-30; such list and addressing information is needed to be able to communication with the communication system from the server/ session controller). Bertram is silent on such maintaining for a second and third communications system. Dunn et al discloses delivering content to multiple communication (cable) systems (see for example; fig 2 and col 2 ln 45-60) to reduce bandwidth and further gain control of distribution of cable and/or satellite content to subscribers (see for example; col 2 ln 7-31). Bertram discloses such a system communicating within a network (see for example; fig 5 and paragraphs 29-30). Communication between multiple networks is well known in the art. It would have been obvious to one of ordinary skill in the art to combine the second

cable system of Dunn within the system of Bertram because it would have provided a means of freeing bandwidth when broadcasting to multiple subscribers by offsetting transmission between different cable systems.

6. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340, in view of in view of Dunn et al (hereinafter Dunn), US Patent 6,154,772 , and further in view of applicant's admitted prior art (hereinafter AAPA).

As per claim 15, Bertram- Dunn discloses the claimed limitations as described above (see claim 4). Bertram further discloses limiting access to the pre-encrypted content (see for example; paragraph 47). AAPA suggests that service tiers distinguish between authorized and unauthorized subscribers (see page 2 lines 25-30). Therefore, one of ordinary skill in the art at the time of the applicant's invention would have realized that such conditional access of Bertram-Dunn provides first and second service tiers in the first cable system.

As per claim 16, Bertram-Dunn discloses the claimed limitations as described above (see claim 15). Bertram further discloses limiting access to the pre-encrypted content (see for example; paragraph 47). AAPA suggests that service tiers distinguish between authorized and unauthorized subscribers (see

page 2 lines 25-30). Therefore, one of ordinary skill in the art at the time of the applicant's invention would have realized that such conditional access of Bertram provides first and second service tiers in the first cable system.

Bertram-Dunn does not explicitly teach generation of entitlement messages. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. Furthermore, ECMs provide access control to specific people, therefore for different tiers. One of ordinary skill in the art at the time of the applicant's invention would have been able to modify the teachings of Bertram-Dunn to further generate a first entitlement control message allowing the first subscriber terminal to access the pre-encrypted content only in the first service tier, and generate a second entitlement message allowing a second subscriber terminal to access the pre-encrypted only in the second service tier. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the Bertram-Dunn combination because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340, in view of applicant's admitted prior art (herein after AAPA).

As per claim 8, Bertram discloses the claimed limitations as described above and further discloses control messages for conveying information to the first subscriber terminal to compute a key (see for example; paragraph 47), and the use of such messages to provide conditional access see for example; paragraph 47). Bertram does not explicitly teach the control messages being a first entitlement control message. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the system of Bertram because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

8. Claims 9, 19, 22, 31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340 in view of Colligan et al (hereinafter Colligan), US Patent 6,415,031.

As per claim 9, Bertram discloses the claimed limitations as described above (see claim 3) and further discloses that first key information is valid for a

designated duration (see for example paragraph 63). Bertram does not explicitly teach changing the first key information after a designated duration, and reporting the key change by the first cable system. Colligan discloses such changing and reporting (see for example; col 4 ln 44-59; reporting is necessary in such a key change to synchronize new key information). Colligan further discloses such means of changing keys for the use of new billing cycles (see for example; col 4 ln 44-58). Thus if a person pays after one cycle has expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the changing and reporting means of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture. Therefore, providing a means of generating more revenue for repeat customers.

As per claim 19, Bertram discloses the claimed limitation as described below (see claim 18). Bertram further discloses an expiration of the first entitlement message (see for example; paragraph 63). Bertram does not explicitly teach the third entitlement message is for permitting access to the first pre-encrypted content after expiration of the first entitlement message. Colligan further discloses a means changing encryption keys, thus entitlement messages.

Colligan further discloses such means of changing for the use of new billing cycles (see for example; col 4 ln 44-58). Thus if a person pays after one cycle has expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the changing and reporting means of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture. Therefore, providing a means of generating more revenue for repeat customers.

Claim 22 is rejected under the same rationale as claim 19.

As per claim 31, Bertram discloses the claimed limitations as described above (see claim 20). Bertram further discloses a time period of valid content (see for example; paragraph 63). However Bertram is silent on a call back mechanism. Colligan also discloses a time period of valid content (see for example; col 4 ln 44-59), with a call back mechanism (see for example; renewal col 8 ln 42-65). Call back mechanisms are well known in the art to provide a means of indicating as expiration of a duration to another system or node. Such call back mechanism is inherent to any system monitoring an expiration of time and renewing the encryption key in response. Colligan further discloses such means of changing keys for the use of new billing cycles (see for example; col 4

In 44-58), wherein changing the first key provides a second control message for permitting access to the pre-encrypted content after the first key information expires (see for example; col 8 ln 42-65 and fig 10). Thus if a person pays after one cycle has expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the call back mechanism means of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture automatically.

As per claim 33, Bertram discloses the claimed limitations as described above (see claim 3). Bertram does not explicitly teach pre-encrypting being carried out using a third key, and the encryption record containing information about the third key. Colligan further discloses encryption using multiple keys, wherein an encryption record contains information about the keys (see for example; 8 ln 23-41). By using different keys many attacks are inhibited since once a key is obtained through an attack, the key is no longer valid. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the multiple key encryption of Colligan within the system of Bertram because it would have increased security by inhibiting attacks through changing keys.

As per claim 34, Bertram-Colligan discloses the claimed limitations as described above (see claim 33). Colligan further discloses translating the third key into the first key information (see for example; col 8 ln 23-41). One of ordinary skill in the art at the time of the applicant's invention would have realized such translating must be present for providing descrambling messages of Bertram.

9. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340 in view of Colligan et al (hereinafter Colligan), US Patent 6,415,031, and further in view of applicant's admitted prior art (AAPA).

As per claim 10, Bertram discloses the claimed limitations as described above (see claim 3) and further discloses that first key information is valid for a designated duration (see for example paragraph 63). Bertram does not explicitly teach changing the first key information. Colligan discloses such changing (see for example; col 4 ln 44-59; reporting is necessary in such a key change to synchronize new key information). Colligan further discloses such means of changing keys for the use of new billing cycles (see for example; col 4 ln 44-58), wherein changing the first key provides a second control message for permitting access to the pre-encrypted content after the first key information expires (see for example; col 8 ln 42-65 and fig 10). Thus if a person pays after one cycle has



expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the changing and reporting means of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture. Therefore, providing a means of generating more revenue for repeat customers.

Bertram-Colligan does not explicitly teach the control messages being entitlement control messages. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. One of ordinary skill in the art at the time of the applicant's invention would have been able to modify the Bertram-Colligan combination such that generation of second control information generates a second entitlement message for the pre-encrypted content for permitting access to pre-encrypted content after the first key information expires. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the Bertram-Colligan combination because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

As per claim 11, Bertram-Colligan-AAPA discloses the claimed limitations as described above (see claim 10). Colligan further discloses the second control message employs second key information (see for example; col 8 ln 42-65 and fig 10). One of ordinary skill in the art at the time of the applicant's invention would have realized such retrofitting of the second control message employing second key information.

As per claim 12, Bertram-Colligan-AAPA discloses the claimed limitations as described above (see claim 11). Colligan further discloses generation of a control message is synchronized with changing of a first key information to a second key information (see for example; col 9 ln 11-8 and fig 10). One of ordinary skill in the art at the time of the applicant's invention would have realized that such generation of a second control message suggests retrofitting the second entitlement control message in the Bertram-Colligan-AAPA combination.

As per claim 13, Bertram discloses the claimed limitations as described above (see claim 3). Bertram further discloses providing parameters from an encryption (see for example; paragraph 41). Bertram does not explicitly teach an encryption renewal system. Colligan discloses providing parameters from an encryption renewal system that generates one or more control messages (see for example; col 8 ln 47-col 9 ln 17). Colligan further discloses such means of

changing keys for the use of new billing cycles (see for example; col 4 ln 44-58), wherein changing the first key provides a second control message for permitting access to the pre-encrypted content after the first key information expires (see for example; col 8 ln 42-65 and fig 10). Thus if a person pays after one cycle has expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the changing and reporting means of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture.

Therefore, providing a means of generating more revenue for repeat customers.

Bertram-Colligan does not explicitly teach the control messages being entitlement control messages. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. One of ordinary skill in the art at the time of the applicant's invention would have realized that such parameters must be provided in order to generate the one or more ECMs. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the Bertram-Colligan combination because it would have provided an improved

means of controlling access to specific users while still providing means of such encrypted content.

As per claim 14, Bertram-Colligan-AAPA discloses the claimed limitations as described above (see claim 13). Bertram further discloses wherein the step of generating an encryption record is by an offline encryption system (see for example; paragraphs 46 and 63).

10. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340.

As per claim 17, Bertram discloses pre-encrypting, by the offline encryption device, the content to form pre-encrypted content prior to the step of receiving a request (see for example; paragraph 63);

generating an encryption record containing parameters employed for encrypting the content; based on the encryption record and a first key information (see for example; encryption algorithm, paragraphs 45-46; an encryption record must be generated in order to carry out encryption and carry out synchronization with the generation of "descrambling" messages)

generating one or more entitlement messages for permitting access that allow decryption of the content (see for example; paragraphs 46-47);

a conditional access system that allows for providing information included in the entitlement messages by the means for generating (see for example; paragraph 47)

and transmitting the pre-encrypted content associated with the one or more control messages to the first subscriber terminal for decryption of the me-encrypted content (see for example; paragraphs 31 and 47) and means for receiving the pre-encrypted content from the means for pre-encrypting (see for example; fig 1 and paragraph 29), forwarding the records to the means for generating which generates the first and second entitlement messages for forwarding to the subscriber terminal (see for example; paragraph 62-63 the encryption record must be forwarded in order to generate corresponding entitlement messages used by the conditional access system).

As for a first and second content, Bertram discloses encryption of different content (see for example; paragraph 60). However, Bertram is silent on the means of encrypting the second content. The means of encrypting further content by the same means would have been obvious to one of ordinary skill in the art at the time of the applicant's invention because it would have allowed for encryption of different content without changing system architecture. Therefore, one of ordinary skill in the art at the time of the applicant's invention would have realized the duplication in generating a second pre-encrypted content.

As per claim 18, Bertram discloses the claimed limitations as described above (see claim 17). Bertram does not explicitly teach generating a third entitlement message. However, Bertram discloses pre-encryption of multiple content (see for example; paragraph 60). Therefore, one of ordinary skill in the

art at the time of the applicant's invention would have realized such generating for a third content.

11. Claim 23-24 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340 in view of applicant's admitted prior art (AAPA).

As per claim 23, Bertram discloses the claimed limitations as described above (see claim 20). Bertram further discloses limiting access to the pre-encrypted content (see for example; paragraph 47). AAPA suggests that service tiers distinguish between authorized and unauthorized subscribers (see page 2 lines 25-30). Therefore, one of ordinary skill in the art at the time of the applicant's invention would have realized that such conditional access of Bertram provides first and second service tiers in the first cable system, Bertram is silent on the use of such messages. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s) (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. Furthermore, ECMs provide access control to specific people, therefore for different tiers. One of ordinary skill in the art at the time of the applicant's invention would have been able to modify the teachings of Bertram to further retrieve entitlement control message with the pre-encrypted content. It would

have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the system of Bertram because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

As for the pre-encrypted content being purchased, Bertram discloses a video-on-demand system (see paragraphs 3-5). Such systems are well known in the art the charge users for viewing of content.

As per claim 24, Bertram discloses a system for delivering content to a subscriber terminal on-demand through a point-to-point communication network (see for example fig 1 and paragraphs 3-5), the system comprising:

an offline encryption system having software containing one or more instructions for pre-encrypting the content to form pre-encrypted content before a content request is received from the subscriber terminal (see for example; paragraph 63);

a video on-demand system including software having one or more instructions for receiving the pre-encrypted content from the offline encryption system (see for example; storage module paragraph 41), and forwarding the pre-encrypted content to the subscriber terminal (see for example; paragraph 42);

and an encryption renewal system interfacing with the offline encryption system to provide encryption parameters for encrypting the content (see for example; paragraph 41).

Bertram further discloses generating control messages allowing the pre-encrypted content to be decryptable for a designated duration (see for example; paragraph 63). However, Bertram does not explicitly teach and interfacing with the video on-demand system to generate entitlement control messages allowing the pre-encrypted content to be decryptable for a designated duration, wherein the entitlement control messages are generated by using a periodical key. AAPA discloses the generation of ECMs which specify the access requirements for the associated content stream and convey information needed by subscriber terminals to compute cryptographic key(s), wherein the ECMs are typically generated using a periodical key (see page 3 lines 20-30). The use of ECMs are well known in the art to provide a means of restricting access in addition to allowing for decryption and access to content. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the ECMs of AAPA within the system of Bertram because it would have provided an improved means of controlling access to specific users while still providing means of such encrypted content.

As per claim 26, Bertram-AAPA discloses the claimed limitations as described above (see claim 24). Bertram further discloses providing two-way subscriber interaction between the subscriber system and the video on-demand system (see for example; fig 1).



As per claim 27, Bertram-AAPA discloses the claimed limitations as described above (see claim 24). Bertram further discloses limiting access to the pre-encrypted content (see for example; paragraph 47). AAPA suggests that service tiers distinguish between authorized and unauthorized subscribers (see page 2 lines 25-30). Therefore, one of ordinary skill in the art at the time of the applicant's invention would have realized that such conditional access of Bertram provides one or more service tiers.

As per claim 28, Bertram-AAPA discloses the claimed limitations as described above (see claim 27). Bertram discloses different service tiers as described above. AAPA further discloses ECMs specifying the access requirements for the associated content stream (see for example; page 3 lines 20-30). One of ordinary skill in the art at the time of the applicant's invention would have realized different ECMs for accessing different service tiers through the Bertram-AAPA combination.

As per claim 29, Bertram-AAPA discloses the claimed limitations as described above (see claim 28). Bertram discloses different service tiers as described above. AAPA further discloses ECMs specifying the access requirements for the associated content stream (see for example; page 3 lines 20-30). One of ordinary skill in the art at the time of the applicant's invention would have realized retrieving ECMs for accessing different service tiers through

the Bertram-AAPA combination and thus specifying the tier for which the subscriber is authorized.

12. Claims 25, 30, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bertram, US Publication 2003/0140340 in view of applicant's admitted prior art (AAPA), and further in view of Colligan et al (hereinafter Colligan), US Patent 6,415,031.

As for claim 25, Bertram-AAPA discloses the claimed limitations as described above (see claim 24). Bertram discloses a conditional access system having software (see for example; paragraphs 42 and 47). Bertram does not explicitly teach interfacing with a billing system to coordinate subscriber access to the pre-encrypted content based on a subscriber purchase. Colligan discloses a video-on-demand system comprising a conditional access system (set top box) interfacing with a billing system to coordinate subscriber access to the pre-encrypted content based on a subscriber purchase (see for example; fig 3 and col 8 ln 47-57). A billing system in any video-on-demand system is well known in the art for generating revenue from a service. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of Colligan within the system of Bertram because it would have provided a means of revenue for providing video-on-demand services.

As per claim 30, Bertram-AAPA discloses the claimed limitations as described above (see claim 24). Bertram further discloses a time period of valid content (see for example; paragraph 63). However Bertram is silent on a call back mechanism indicating the next time by which the video on-demand system should contact the encryption renewal system. Colligan also discloses a time period of valid content (see for example; col 4 ln 44-59), wherein a renewal is requested (see for example; col 8 ln 42-65). Call back mechanisms are well known in the art to provide a means of indicating an expiration of a duration to another system or node. Such call back mechanism is inherent to any system monitoring an expiration of time and renewing the encryption key in response. Colligan further discloses such means of changing keys for the use of new billing cycles (see for example; col 4 ln 44-58), wherein changing the first key provides a second control message for permitting access to the pre-encrypted content after the first key information expires (see for example; col 8 ln 42-65 and fig 10). Thus if a person pays after one cycle has expired, they can still view the content. Bertram discloses a means wherein the content is invalid after a period of time, however is silent on such means of continued viewing. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the call back mechanism of Colligan within the system of Bertram because it would have provided a means of continuous viewing of content through a billing architecture.

As per claim 35, Bertram-AAPA discloses the claimed limitations as described above (see claim 25). Bertram further discloses wherein the video on-demand system and the conditional access system of decoupled (see for example; content and asset storage and subscriber equipment, fig 1)

As per claim 36, Bertram-AAPA discloses the claimed limitations as described above (see claim 25). Bertram further discloses wherein the video on-demand system and the conditional access systems comprise a first cable system, each communicably coupled to the encryption renewal system (see for example; fig 1).

As per claim 37, Bertram-AAPA discloses the claimed limitations as described above (see claim 36). As for a second cable system having a second conditional access system and a second video on demand system, Bertram discloses a means of distributing content using a cable system as described above (see claim 24). Bertram is silent on the details of a second cable system. However, communication of content to multiple cable systems is well known in the art. Dunn et al discloses delivering content to multiple cable systems (see for example; fig 2 and col 2 ln 45-60) to reduce bandwidth and further gain control of distribution of cable and/or satellite content to subscribers (see for example; col 2 ln 7-31). Bertram discloses such a system communicating within a network (see for example; fig 5 and paragraphs 29-30). Communication between multiple

networks is well known in the art. One of ordinary skill in the art at the time of the applicant's invention would have been able to perform pre-encryption using the system of Bertram for a second cable system of Dunn. It would have been obvious to one of ordinary skill in the art to combine the second cable system of Dunn within the system of Bertram because it would have provided a means of freeing bandwidth when broadcasting to multiple subscribers by offsetting transmission between different cable systems.

13. Claims 38-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al (hereinafter Dunn), US Patent 6,154,772, in view of Colligan et al (hereinafter Colligan), US Patent 6,415,031.

As per claim 38, Dunn discloses a method of delivering content to subscribers (see for example; col 5 ln 56-col 5 ln 35) the method comprising:

if the first communication is authorized to receive the content, transmitting the content to the first communication system (see for example; col 2 ln 45-60 and col 6 ln 3-10);

storing the content by the first communication system (see for example; place on a bus, col 2 ln 45-60) if the second communication system is authorized to receive the content (see for example; plurality of central office locations, col 6 ln 3-11). As for transmitting the content to the second communication system, and storing the content by the second communication system, Dunn discloses that multiple communications systems exist (see for example; col 6 ln 3-11 and

fig 2), wherein the content is distributable by the first communication system to a first subscriber within the first communication system upon request from the first subscriber (see for example; configured to deliver col 2 ln 55-60 and col 6 ln 51-65), and the content is distributable by the second communication system to a second subscriber within the second communication system upon request (see for example col 5 ln 51-65 and fig 2). One of ordinary skill in the art at the time of the applicant's invention would have realized such communication between a central authority and a second communication system to be the same means as communication between the central authority and the first communication network.

Dunn further discloses encrypted (encoded) content (see for example; col 5 ln 60-65), however, Dunn does not explicitly teach pre-encrypting the content. Colligan further discloses pre-encrypting the content once at a centralized facility (see for example; col 6 ln 56-65), and prior to distribution to the first communication system (see for example; col 7 ln 20-34) because of the expense of real-time encryption in video-on-demand systems (see for example; col 1 ln 49-64). Dunn further discloses such content distribution for a video-on-demand system (see for example; col 1 ln 31-46). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the pre-encryption means of Colligan within the system of Dunn because it would have provided content protection at a reduced expense in both cost and space for the provider.

As per claim 39, Dunn-Colligan discloses the claimed limitations as described above (see claim 38). Colligan further discloses wherein the pre-encrypted content is encrypted prior to transmitting the content to a communication system (see for example; col 7 ln 20-34). The purpose of pre-encrypting content is to protect the content during transmission. Therefore, one of ordinary skill in the art would have recognized such pre-encryption prior to transmission to a first and second communication system.

14. Claim 40 is rejected under 35 U.S.C. 103(a) as being obvious over Bertram, US Publication 2003/0140340 in view of Safadi et al (hereinafter Safadi), US Patent 6,256,393

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the

application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As per claim 40, Bertram discloses the claimed limitations as described above (see claim 20). Bertram further discloses authorization to view the content (tiers) (see for example; paragraph 56). In such on-demand video systems, the authorization is associated with a service that is purchased in advance. Safadi discloses a means of delivering content with such subscriber tiers (see for example; col 5 ln 5-40). Safadi further discloses a subscriber tier as a means of controlling access to content wherein the tier is associated with a service and purchased in advance (see for example; col 4 ln 35-44 and col 5 ln 5-15). Such tiering is well known in the art to be used in cable systems, especially on demand systems. One of ordinary skill in the art at the time of the applicant's invention would have realized such authorization of Bertram to be a subscription tier through the definition of Safadi.

### ***Conclusion***

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.



Virine et al, US Patent 6,487,390, discloses a means of access control on on-demand television content.

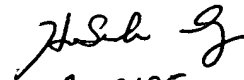
Son et al, US Patent 6,229,895, discloses a means of pre-encrypting video-on-demand content.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen S. Wu whose telephone number is 703-305-0708. The examiner can normally be reached on Monday-Friday 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703-305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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